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Environmental Protection
Agency

Solid Waste and
Emergency Response
(5502G)

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Spring 1993

EPA Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Old Midland Products Site Profile

Site Description:
Former wood preserving plant in Yell County, Arkansas

Site Size: 38 acres

Primary Contaminants:
Pentachlorophenol (PCP) and polynuclear aromatic hydrocarbons (PNAs)

Potential Range of Health Risks:
Liver, kidney, or central nervous system disorders from direct contact with contaminants

Nearby Population Affected:
1,500 residents within four miles

Ecological Concerns:
Petit Jean River ecosystem via Keeland Creek

Year Listed on NPL: 1984

EPA Region: VI

State: Arkansas

Congressional District: 2

Success In Brief

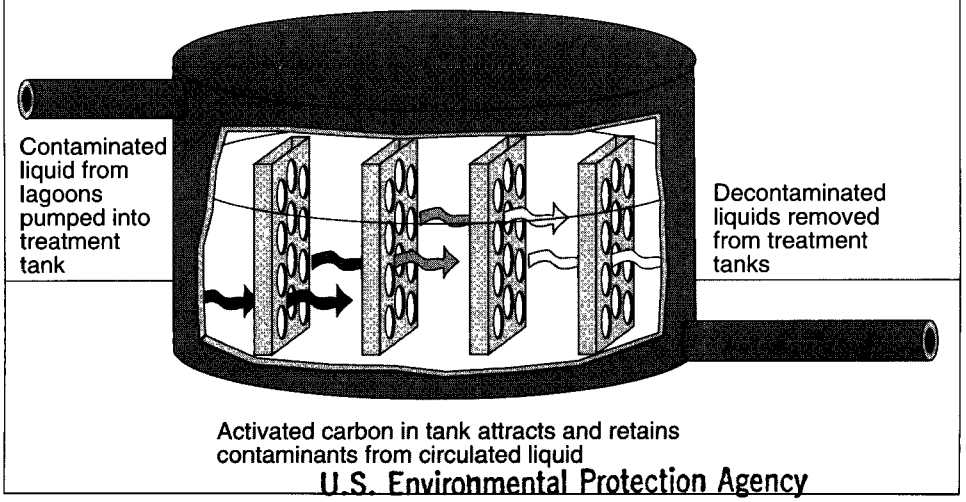
Superfund Site Clean Enough for Unrestricted Use?

The Old Midland Products site in Yell County, Arkansas was contaminated by hazardous chemicals from operations of a wood preserving plant. The U.S. Environmental Protection Agency (EPA) worked closely with the Arkansas Department of Pollution Control and Ecology (ADPCE) to select a cleanup plan to remediate the site, allowing unrestricted use by 1998. EPA and ADPCE actions consisted of:

- Treating over 11 million gallons of contaminated surface water and lagoon liquids;
- Employing a highly efficient, transportable incinerator to destroy more than 85,000 tons of contaminated soil and lagoon sludges over a short period of time;
- Installing recovery wells to treat an estimated 450,000 gallons of contaminated ground water; and
- Maintaining effective community relations with local residents to address their concerns and involve them in the cleanup process.

Because this site was abandoned and no viable parties could be located to conduct the cleanup, EPA's Superfund program was used to address the huge volume of wastes. This site serves as an example of how EPA, state agencies, and local residents can work together to restore the environment polluted by hazardous waste.

Treating Lagoon Liquids At Old Midland Products Site



The Site Today

The majority of the contaminated soil and lagoon sludges has been incinerated, and operations should be completed in April 1993. In addition, the contaminated surface water and lagoon liquids are currently being treated.

Treatment of the contaminated ground water should be completed by mid-1998, after which the site will be re-evaluated to determine whether it is safe for unrestricted use.

A Site Snapshot

The Old Midland Products site is a 38-acre, former wood preserving plant in Yell County, Arkansas that operated from 1969 to 1979. The Old Midland Products Company abandoned the site after declaring bankruptcy in 1979.

The site is located in a flat, rural area about one-half mile east of the town of Ola and 70 miles northwest of the City of Little Rock. Approximately 190 people live in the immediate area.

Local residents depend on private wells which apparently are not contaminated.

Most of the hazardous waste at the site is confined to a three-acre area that contains the wood preserving plant and seven lagoons used for waste disposal.

The Petit Jean Wildlife Management Area, located upriver about one mile north of the site, is not endangered. However, surface drainage from the lagoons could have entered nearby Keeland Creek, a tributary of the Petit Jean River.

Private drinking water wells near the site have not shown any signs of contamination

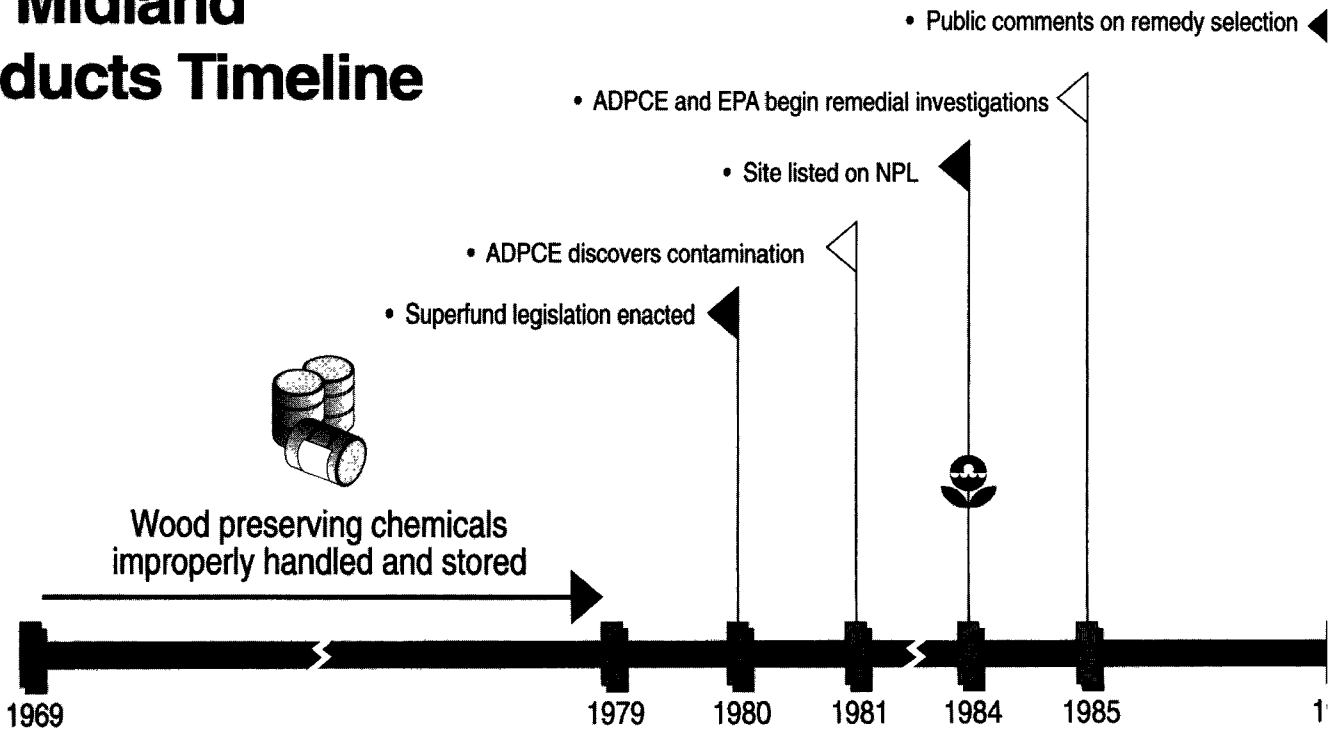
In addition, there is a chicken farm and other nearby commercial establishments that could have been affected if the contamination had migrated off the site.

Pentachlorophenol (PCP) and polynuclear aromatic hydrocarbons (PNAs), chemicals used in the wood preserving process, are the primary pollutants. Low levels of less toxic types of dioxins and furans have also been detected on the site.

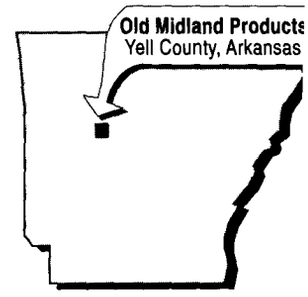
Direct exposure to these chemicals has been found to cause cancer or liver and kidney damage, as well as disorders of the central nervous system.

Studies have shown that area residents have not been directly exposed to any of these chemicals.

Old Midland Products Timeline



EPA and ADPCE Address Contamination At Old Midland Products Site



Lagoons Most Contaminated

The Arkansas Department of Pollution Control and Ecology (ADPCE) first discovered contamination at the site in 1981. ADPCE asked EPA to determine whether the site posed immediate threats to the surrounding community.

A preliminary assessment identified the need for a comprehensive cleanup. In July 1984, the Old Midland Products site was placed on the National Priorities List (NPL), EPA's roster of uncontrolled or abandoned hazardous waste sites eligible for cleanup under Superfund.

Between 1985 and 1987, EPA and ADPCE conducted a remedial investigation at the site to determine the extent of the contamination. While most of the hazardous waste was confined to three acres, the lagoons contained an estimated 2,770 cubic yards of contaminated sludges and 620,000 gallons of liquid wastes.

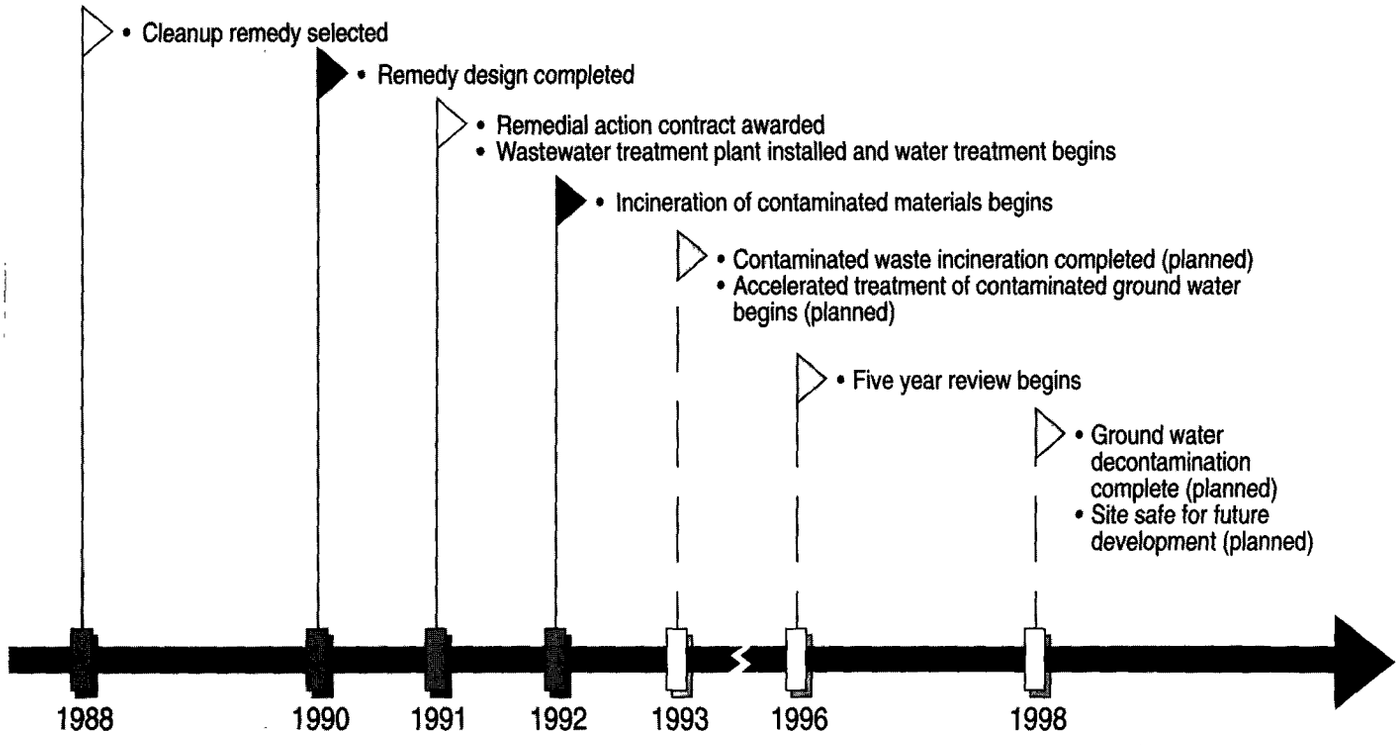
Lagoons contained 620,000 gallons of wastes contaminated with wood processing chemicals

In addition, 23,000 cubic yards of soil around and under the lagoons were found to be contaminated down to a depth of 14 feet. Almost half a million gallons of ground water also were polluted in the upper aquifer.

As part of the study, EPA and ADPCE conducted an assessment of the health effects associated with PCP, PNAs, and dioxins and furans. Soil and water sampling confirmed that these chemicals were only found within the site boundaries. A fence was erected to prevent any public access to the site.

Cleanup Alternatives Examined

Following the field investigations, cleanup alternatives were evaluated to determine the best method to remediate the site's hazardous waste.



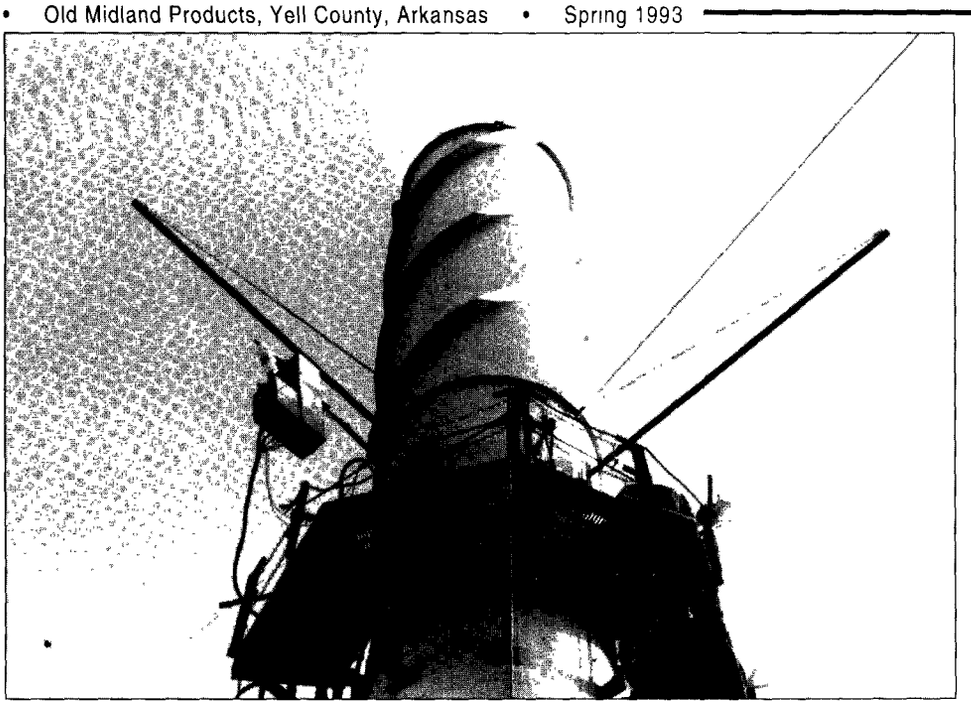
In November 1987, EPA requested comments from the ADPCE and the public on the cleanup alternatives under consideration. The final cleanup plan for the Old Midland Products site addressed lagoon liquids, ground water, soil, sediments, and sludges.

Cleanup for the site addressed lagoon liquids, ground water, soil, sediments, and sludges

A major component of the plan involves treating lagoon liquids using carbon adsorption. This technique flushes contaminated water through tanks filled with activated carbon that attracts and retains contaminants.

Eight recovery wells will be installed to collect ground water prior to treatment with carbon adsorption. In addition, soil, sediments and sludges from the lagoons and drainage areas are to be excavated and the contaminants destroyed in an on-site, transportable incinerator.

EPA initially estimated the total cleanup of the site at $13.8 million with a completion date of 1996. Because the site was abandoned, EPA financed 90 percent and the State of Arkansas funded 10 percent of the cleanup. This is a state-led project being administered by ADPCE.



Clean vapors and steam are released from an exhaust stack at the Old Midland Products site. Following combustion, air pollution control devices remove acid gases and particulates.

Cleanup Methods Offer Permanent Solution

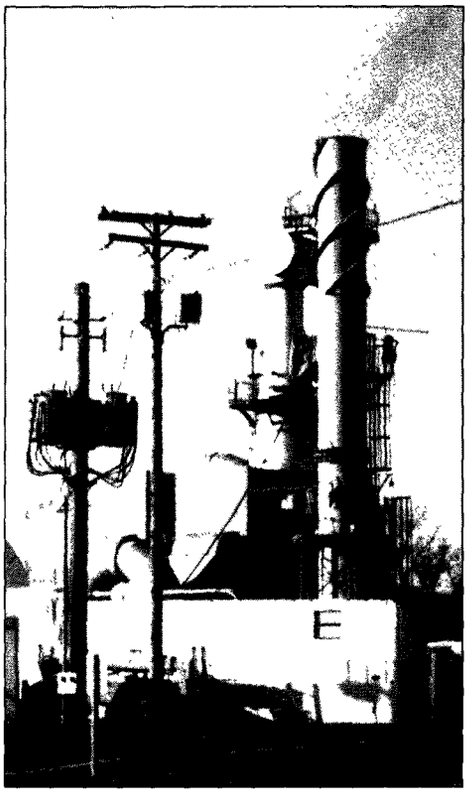
A remedial action contract was awarded in March 1991 and site work started in May. The water treatment facility was completed in December 1991. Liquids from the waste lagoons and contaminated storm water runoff are being collected and treated on site using the carbon adsorption system.

Eight ground water recovery wells will be installed at depths of 35 feet and the liquids pumped and treated using activated carbon which retains the contaminants. The treated water will be discharged into a site drainage ditch. The oil and other contaminants removed from the water will be taken to a licensed commercial facility for disposal. Ground water recovery should start by mid-1993, and should be completed by mid-1998.

A transportable incinerator is currently employed to destroy contaminants in the soil and lagoon sludges at the Old Midland Products site. Hazardous wastes are burned at extremely high temperatures to destroy the organic compounds.

Air pollution control devices remove acid gases and particulates, so only clean vapors and steam are released from the exhaust stacks. The resulting ash is nonhazardous and placed in excavated areas on site, then covered with topsoil and vegetation.

The incineration is expected to be completed in April 1993. After all contaminants in the soil and lagoon sludges have been destroyed, the incinerator will be dismantled.



Transportable Technology
The incinerator used at the Old Midland Products site was brought in for cleanup activities. When remediation is complete it will be disassembled.

Transportable Incinerator: Model of Efficiency

The incinerator used at the Old Midland Products site was required to meet strict standards for efficiency due to the presence of low levels of dioxins.

To meet these standards, trial burn tests were conducted to determine the destruction and removal efficiency (DRE) for selected principal organic hazardous constituents (POCs).

The incinerator has destroyed more than 85,000 tons of contaminated material

The incinerator at the Old Midland Products site was able to demonstrate the 99.9999% DRE requirement for pentachlorophenol, dioxins and furans using 1, 2, 4-trichlorobenzene in the trial burn.

In addition, the incinerator achieved other performance specifications that included demonstrating a 99.99% DRE for other POCs, for control of hydrogen chloride emissions, and for control of particulate emissions. Full-time operations began soon after final ADPCE and EPA approval of the test results in June 1992.

The average continuous operation time for incinerators is seven to ten days. However, the Old Midland Products incinerator has operated continuously for as long as 63 days, much longer than historically has been achieved by other comparable facilities.

As a result, the incinerator has been able to destroy more than 85,000 tons of contaminated material in a 10-month period.

Originally, the cleanup plan estimated that six tons of contaminated material could be destroyed per hour, but the incinerator has averaged almost 17 tons.

This rate of efficiency proved critical to the site cleanup because EPA later discovered more contaminated soil and lagoon sludges. Despite the higher volume of waste, the cleanup should still be completed on schedule.

Agencies Work With Community

As with any Superfund site, EPA stresses the importance of community involvement throughout the various stages of cleanup.

EPA and ADPCE worked closely with local residents to address their concerns about the Old Midland Products site.

One resident who lives near the site was concerned about the quality of her drinking water. She informed ADPCE and EPA, and was connected to the local city water system at a minimal cost.

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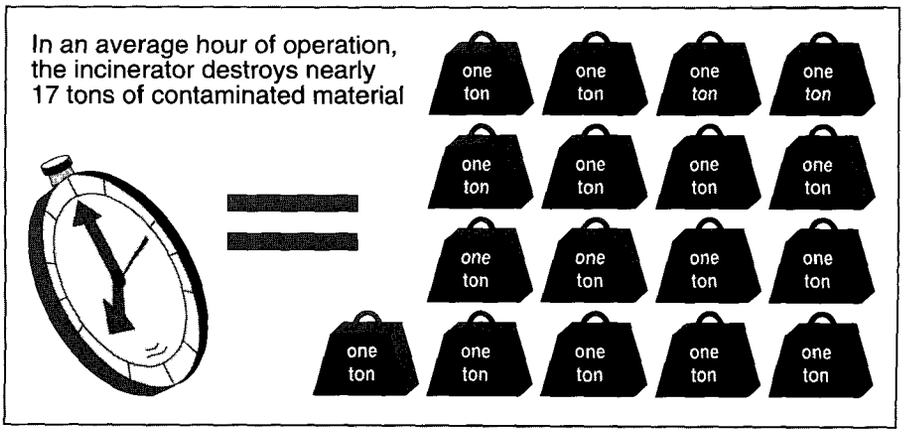

Federal and State Agencies Work Closely With Community

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Although no signs of contamination were present in tests of her well, the potential existed for ground water contamination.

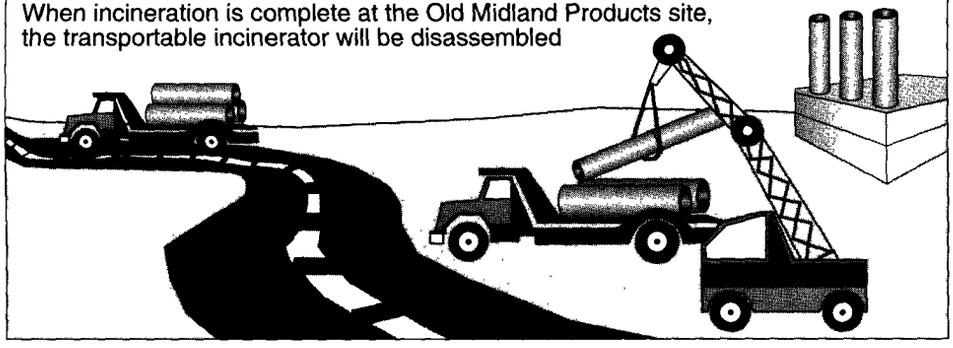
Unlike other environmental statutes, Superfund is unique in that public participation is relied upon for the selection of the cleanup remedy.

At the Old Midland Products site, ADPCE and EPA held public meetings and wrote several fact sheets to educate local residents about incinerator technology.

By demonstrating the safety of incineration, the community has learned that this was the most effective remedy for the huge volumes of waste at the site.

In just a few years, the Old Midland Products site can be converted to more productive uses, having greater benefits for the residents.

When incineration is complete at the Old Midland Products site, the transportable incinerator will be disassembled



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Success at Old Midland Products Site

EPA and the Arkansas Department of Pollution Control and Ecology (ADPCE) are proceeding with the cleanup of the Old Midland Products site.

The transportable incinerator selected to treat hazardous waste serves as a model of efficiency and safety. EPA and ADPCE worked closely with local residents to address their concerns about the risks posed by pollution at the site.

The cleanup is proceeding on schedule and should allow the site to be safe for future development by 1998, after completing the treatment of the contaminated ground water.

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